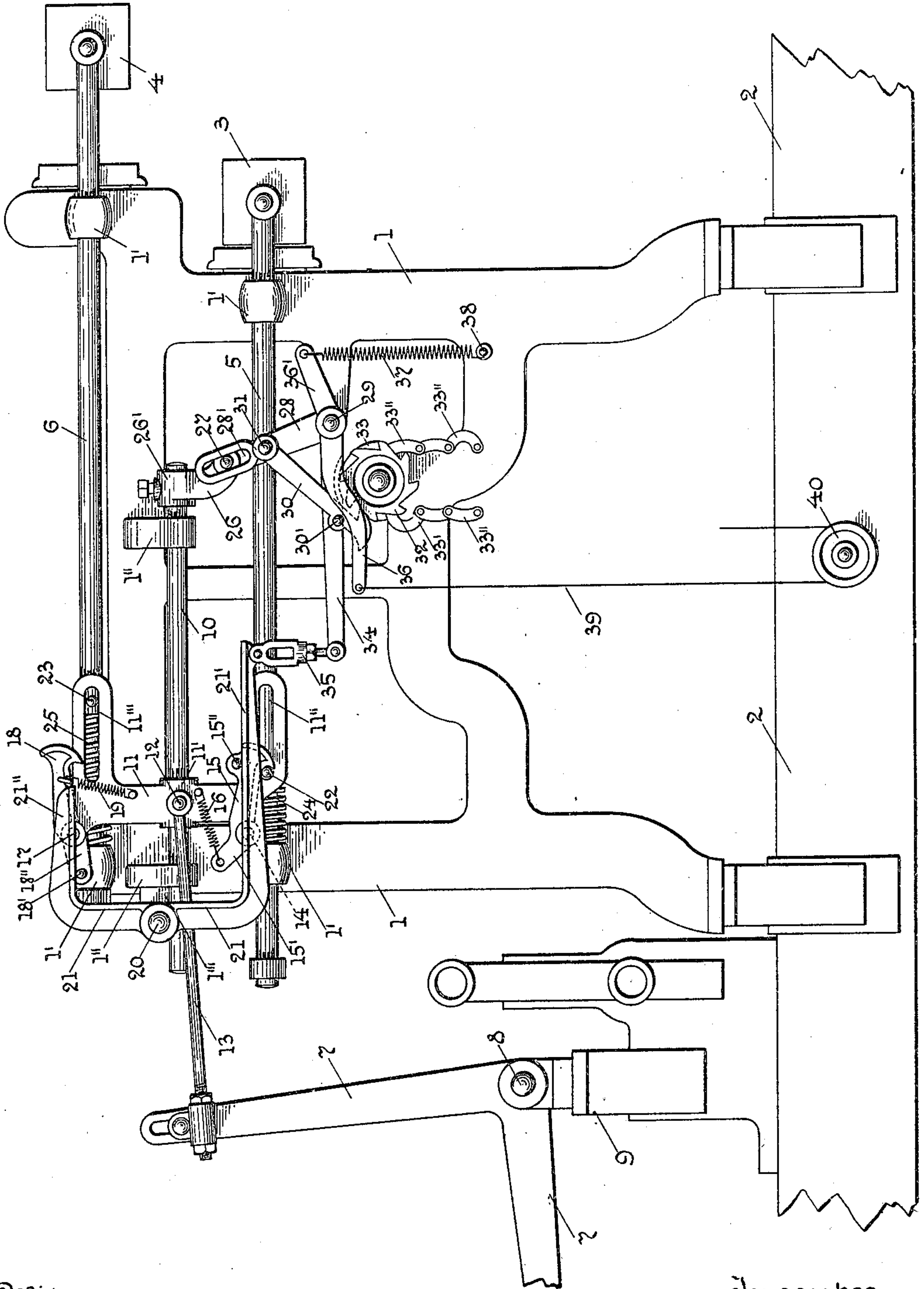


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JACQUARD MECHANISM FOR LOOMS.  
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953,379.

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# UNITED STATES PATENT OFFICE.

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## JACQUARD MECHANISM FOR LOOMS.

953,379.

Specification of Letters Patent. Patented Mar. 29, 1910.

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*To all whom it may concern:*

Be it known that I, HENRY DEERING, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Jacquard Mechanism for Looms, of which the following is a specification.

My invention relates to a jacquard mechanism for looms, and to a two cylinder jacquard mechanism for weaving cross bordered or headed fabrics, such as carpet squares, and shawls, or fabrics with two patterns, and my invention particularly relates to the operating mechanism for the two pattern card cylinders of the jacquard of the class referred to, and shown and described in U. S. Letters Patent, No. 682,115.

The object of my invention is to provide an improved mechanism for automatically controlling the operation of the pattern card cylinders at a predetermined time.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawing a detached portion of a jacquard machine of the class referred to, having mechanism embodying my improvements for operating the two cylinders of the jacquard, sufficient to enable those skilled in the art to understand the construction and operation thereof.

The drawing is a side view or elevation of a part of a jacquard machine of the class referred to, having my improvements applied thereto.

In the accompanying drawing, 1 is one end or side frame of the jacquard, secured on the cross timber 2 in the usual way. 3 and 4 are the two pattern card cylinders arranged on the same side of the jacquard, and each adapted to act on its respective set of jacquard needles and uprights, not shown. The two cylinders 3 and 4 are mounted respectively upon the ends of the horizontally extending rods 5 and 6, each of which is mounted to have a reciprocating movement in bearings 1' on the frame 1. The operating lever 7 for the cylinders 3 and 4, is mounted on a shaft 8 on the stand 9, and is connected with and operated by a moving part of the loom, not shown. All of the above mentioned parts may be of the usual and well known construction in the class of jacquards referred to.

I will now describe my improvements in the mechanism for operating the two pattern card cylinders 3 and 4.

A horizontally extending rod 10 is mounted in bearings 1'' on the end frame 1, to have a reciprocating motion, and has fast thereon the hub 11' of a plate or casting 11. On the hub 11' of the plate 11 is a stud 12, which is connected by a rod or connector 13 to the operating lever 7. The lever 7 is constantly in motion while the loom is running, and therefore the plate 11 and rod 10 will have a constant reciprocating motion. The lower end of the plate 11 has a stud 14 thereon, on which is mounted a hook or pawl 15. A helically coiled tension spring 16, attached to an extension 15' on the pawl 15, and to a pin on the plate 11, acts to move downwardly said pawl. The upper end of the plate 11 has a stud 17 thereon, on which is mounted a hook or pawl 18. A helically coiled tension spring 19 is attached at one end to the hook or pawl 18, and at its other end to a stud on the plate 11, and acts to draw down said hook or pawl 18.

Extending transversely through the jacquard frame, at the end thereof, is a shaft 20, mounted in suitable bearings 1''' on the end frame 1, and having fast thereon the yoked shaped arm 21. The lower arm 21' of said arm 21 extends under and is adapted to engage a pin 15'' on the lower hook or pawl 15. The upper arm 21'' of the arm 21 extends over and is adapted to engage a pin 18' on an arm 18'' on the upper pawl 18. The rocking of the arm 21 in one direction will cause the lower pawl 15 to be raised, and allow the upper pawl 18 to be lowered, and the rocking of the arm 21 in the other direction, will allow the lower pawl 15 to be lowered and cause the upper pawl to be raised. On the reciprocating cylinder rod 5 is a pin 22, which extends into and travels in an elongated slot 11'' in an extension on the lower end of the plate 11. On the reciprocating cylinder rod 6 is a pin 23, which extends into and travels in an elongated slot 11''' in an extension on the upper end of the plate 11. A helically coiled expansion spring 24 encircles the lower cylinder rod 5, and acts to move it in one direction, and a helically coiled expansion spring 25 encircles the upper cylinder rod 6, and acts to move it in one direction. The lower pawl 15 is



adapted to engage the pin 22 on the cylinder rod 5, to move said cylinder rod, and with it the pattern chain cylinder 3 in one direction, and the upper hook 18 is adapted to engage the pin 23 on the cylinder rod 6, to move said rod and the pattern chain cylinder 4 in one direction. On the reciprocating rod 10, carrying the plate 11, is fast a hub 26' having an arm 26 carrying a pin 27, which extends into and travels in an elongated opening 28' in an arm 28, which is pivotally mounted at its lower end on a stud 29. A pawl 30 is pivotally mounted at its upper end on a stud 31 on the arm 28, and is adapted to engage the teeth of a ratchet wheel 32, to turn said ratchet wheel one-eighth of its revolution at every movement of the pawl 30.

The ratchet wheel 32 is connected with and operates a pattern chain or cylinder carrying a pattern chain 33, made up of high links 33', and low links 33'', in the usual way. On the stud 29 is loosely mounted one end of a lever 34, which extends over and is adapted to be engaged by the pattern chain 33. The other end of the lever 34 is connected by an adjustable link 35 with the lower arm 21' of the arm 21. When a low link 33'' on the pattern chain 33 passes under the lever 34, the arm 21 will be rocked or moved downwardly, thus allowing the hook or lower pawl 15 to be dropped, and causing the upper pawl 18 to be raised. The lowering of the lower hook 15 allows it to engage the pin 22 on the rod 5 of the lower cylinder 3, so that the movement of the plate 11, through the movement of the lever 7, will move the rod 5 and cylinder 3. The raising of the pawl 18 will move it out of the path of the pin 23 on the rod 6, leaving said rod 6 and pattern card cylinder 4 stationary. When a high link 33' on the pattern chain 33 comes under the lever 34, said lever will be raised, and through link 35 the arm 21 will be raised, causing the pawl 15 to be raised out of the path of the pin 23, and leaving the rod 5 and the pattern chain cylinder 3 at rest; the raising of the arm 21 will allow the spring 19 to act to move the pawl 18 down into the path of the pin 23 on the rod 6, to engage and move said rod 6 and the pattern card cylinder 4, through the movement of the plate 11, connected to the lever 7. It will thus be seen, that the pattern cylinders 3 and 4 are operated alternately, according to the indications of the pattern chain 33.

In connection with the pattern chain 33 and the pawl 30, I preferably use a lever 36, pivotally mounted on the stud 29, and having an extension 36' which is attached at one end to a helically coiled expansion spring 37; the other end of said spring is attached to a stud 38 on the loom frame 1.

The lever 36 extends under and is adapted to engage a pin 30' on the pawl 30. To the end of the lever 36 is attached one end of a cord or connector 39, which passes around the guide sheave 40, and is attached to an upright of the jacquard, not shown. The lever 36 in its normal position is raised by the spring 37, and through engagement with the pin 30' on the pawl 30, raises said pawl and holds it out of engagement with the ratchet wheel 32, but when the upright of the jacquard, not shown, through the cord 39, draws downwardly the lever 36, against the action of the spring 37, the pawl 30 is allowed to drop down to engage the ratchet wheel 32 and rotate the same, and also the pattern chain 33.

The advantages of my improvements will be readily appreciated by those skilled in the art; they are of simple construction, and are adapted to be applied to and used on jacquards of any ordinary construction.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a jacquard mechanism, the combination with two pattern cylinders, cylinder rods, and a single lever for operating said rods and cylinders, of mechanism intermediate said lever and rods, for operating said rods and cylinders independently, said mechanism comprising a plate fast on a reciprocating shaft, and said shaft, and connections intermediate said shaft and a pattern chain or surface, to operate said pattern chain, and said pattern chain, and connections intermediate said pattern chain and a movable or rocking arm, and said arm, adapted to operate two hooks or pawls, and said hooks or pawls mounted on said plate, one of said pawls adapted to be moved into and out of engagement with one cylinder rod, and the other of said pawls adapted to be moved into and out of engagement with the other cylinder rod, to cause the movement of said rods and the pattern cylinders attached thereto, one rod and cylinder at a time.

2. In a jacquard mechanism, the combination with two pattern cylinders, cylinder rods, and a single lever for operating said rods and cylinders, of mechanism intermediate said lever and rods for operating said rods and cylinders independently, said mechanism comprising a plate fast on a reciprocating shaft, and said shaft, and connections intermediate said shaft and a pattern chain or surface, to operate said pattern chain, and said pattern chain, and connections intermediate said pattern chain and a movable or rocking arm, and said arm adapted to operate two hooks or pawls, and said hooks or pawls mounted on said plate, one of said pawls adapted to be

5 moved into and out of engagement with one cylinder rod, and the other of said pawls adapted to be moved into and out of engagement with the other cylinder rod, to cause the movement of said rods and the pattern cylinder attached thereto, one cylinder at a time, and mechanism for automatically controlling the operation of the pattern chain or surface.

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Witnesses:

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